

**REMARKS**

**Rejection of claim 30 under 35 USC 112 second paragraph**

Claim 30 has been amended to clarify the type of fabric being claimed.

**Rejection of Claims 27-42 under 35 USC 103(a) as being unpatentable over Kopf (US 6,139,746 incorporating the disclosure of US 5,868,930) in view of Weimer (US 5,998,222) and Baeumner (US 6,576,460)**

At the outset it is noted that none of the references teaches a process for decontaminating a liquid food from one or more chemical and/or biological contaminants using membranes to which antibodies specific for the contaminants are chemically conjugated through a linker and are immersed into the liquid food decontaminating the liquid in a single operation.

The Kopf reference relates to the combination of a chromatographic process with a filtration device. The filter device is a cassette that has a stack of cross flow filters used to remove contaminants from a liquid. The filtration is performed by using various pore sizes on the filter sheets to selectively allow passage of a desired particle size. There is no disclosure of using a membrane having an antibody covalently bonded to the membrane. The process of the Kopf patent is described at column 12, from line 19 to line 40. The process includes the steps of: 1) contacting the liquid with the chromatographic resin, 2) stirring 3) diafiltrating the resin and further processing the liquid to be decontaminated. There is no disclosure of immersing a membrane having antibodies chemically conjugated through a linker specific for removal of contaminants into a liquid food to remove the contaminants in a single operation.

The Weimer reference discloses a process for removing a specific contaminant from a liquid milk product. Various contaminants are listed in the document and include antibiotics,

bacteria, viruses, proteins and enzymes. The document discloses using a specific antibody that is covalently bound to a solid support matrix. Various matrix materials in the form of a bead are listed including glass, ceramic or polystyrene materials. There is no disclosure of immersing a membrane having antibodies chemically conjugated through a linker specific for removal of contaminants into a liquid food. Additionally, one of skill in the art would not combine the Kopf reference with the Weimer reference since the only realization mode of the antibody-bound matrix is a bead, which cannot be combined with a filtration device, unless a multistep process is developed. The teachings of the two references must be taken as a whole (see MPEP 2141.02). As the two references operate in completely different manners with the Kopf reference teaching a filtration process based on selectively capturing various particle sizes while the Weimer reference discloses the use of antibody bound beads, a combination of the two references would require a substantial redesign of the two mechanisms. (See MPEP 2143) The beads would prohibit the filtration as disclosed in the Kopf reference. Therefore, withdrawal of the rejection is respectfully requested.

The Baeumner reference relates to a filtration detection device that has a first binding material immobilized on the filter, which binds to a portion of an analyte. A detection assembly is positioned relative to the filter to quantify the analyte that is bound to the first binding material. A second binder material having a marker complex may be introduced through a conjugate such that the second binding material attaches to a portion of the analyte not attached by the first binding material. The amounts of the marker can be measured on the filter device to correlate with an amount of analyte in the test sample. The Baeumner reference relates to a filtration device for analytic purposes. The process for contaminants detection is therefore based

on the liquid flowing through the filter device. It should be noted that volumes and sensitivity in the analytical field of this prior art document and in general in the analytical field are quite different from those used in liquid foods processing and in particular in decontamination processes. The analytical field deals with small volumes and high sensitivity, as exemplified in the Baeumner patent at column 18, Table 1. The volumes vary from 100 to 300  $\mu$ l. The above conditions are quite different from those underlying the technical field of the present invention, which deals with large volumes. For example, the volumes disclosed in Examples 15-17, respectively on page 16, line 16: "*The wine was subdivided into six 50 l. (liter) aliquots*", on page 18, lines 7-9: "*The wine was further added with ethyl carbamate and then subdivided into four 50 l aliquots*" and Example 17 page 19, lines 23-25: "*Then the milk was added with aflatoxin up to a final concentration of 0.3 mg/l milk and subdivided into 10 l aliquots, which were treated as follows:...*". The Baeumner patent does not disclose a process for decontaminating a liquid food from one or more chemical and/or biological contaminants using membranes to which antibodies specific for the contaminants are chemically conjugated through a linker and are immersed into the liquid food decontaminating the liquid in a single operation.

To establish prima facie obviousness all the claim limitations must be taught or suggested by the prior art. (see MPEP section 2143.03) As there is no disclosure in the combined references of immersing a membrane having antibodies chemically conjugated through a linker specific for removal of contaminants into a liquid food to remove the contaminants in a single operation, applicant's attorney respectfully requests withdrawal of the rejection.

### **Conclusion**

In view of the above amendment, applicant believes the pending application is in condition for allowance. The Examiner is invited to telephone the undersigned attorney if doing so would advance prosecution of this case.

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